

37th Annual Meeting, APS Division of Plasma Physics

6-10 November 1995, Louisville, KY

Abstract Submittal Form

Deadline: Friday, 7 July 1995

Subject Classification Category _____
(Refer to the DPP Subject Category list on page M12.)

[] Theory [] Experiment

Temporal bursting of stimulated Raman backscatter in underdense plasmas, C.A. Coverdale[†], C.B. Darrow, and C.D. Decker, *Lawrence Livermore National Lab, P.O. Box 808, Livermore, CA 94550*, N. Naumova and S. Bulanov, *General Physics Institute, Russian Academy of Sciences, 117942 Moscow, Russia*, W.B. Mori and K.C. Tzeng, *University of California, Los Angeles, Los Angeles, CA 90024*. Wavebreaking and temporal bursting of stimulated Raman backscatter in subpicosecond laser underdense plasma interactions have been investigated through experiments and particle-in-cell simulations. Deep modulations which vary in character with both plasma density and laser intensity and exhibit a distinct symmetry pattern have been observed in backscattered SRS spectra. The onset of the modulations correlated with saturation of the reflectivity of the stimulated Raman backscatter. Relativistic, fixed ion, 1-D particle-in-cell simulations indicate that the modulations result from temporal bursting of the backscatter which accompanies wave-breaking of the SRS plasma wave.

*This work was performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under contract No. W-7405-ENG-48.

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